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Three new country records of colubrid snakes (Squamata, Colubridae) for the Republic of Kosovo

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Abstract

Three new species of Colubridae are reported for the Republic of Kosovo for the first time in the published literature: *Platyceps najadum* (Eichwald, 1831), *Telescopus fallax* (Fleischmann, 1831), and *Zamenis situla* (Linnaeus, 1758). Literature on bites from these genera is reviewed, and it is demonstrated that no new dangerously venomous snakes are recorded for Kosovo.

Key Words

Balkans, faunistics, fieldwork, reptile, snake

Introduction

The reptiles of the Republic of Kosovo currently include 22 species (Ajtić and Tomović 2001; Tomović et al. 2015; Ibrahimi et al. 2019; Geci and Sherwood 2025), namely: eight snakes [*Coronella austriaca* Laurenti, 1768 (Colubridae), *Dolichophis caspius* (Gmelin, 1789) (Colubridae), *Natrix natrix* (Linnaeus, 1758) (Colubridae), *Natrix tessellata* (Laurenti, 1768) (Colubridae), *Zamenis longissimus* (Laurenti, 1768) (Colubridae), *Vipera ammodytes* (Linnaeus, 1758) (Viperidae), *Vipera berus* (Linnaeus, 1758) (Viperidae), and *Vipera ursinii* (Bonaparte, 1835)]; eleven lizards [*Anguis fragilis* Linnaeus, 1758 (Anguidae), *Mediodactylus kotschyi* (Steindachner, 1870) (Gekkonidae), *Algyroides nigropunctatus* (Duméril and Bibron, 1839) (Lacertidae), *Darevskia praticola* (Eversmann, 1834) (Lacertidae), *Lacerta agilis* Linnaeus, 1758 (Lacertidae), *Lacerta viridis* (Laurenti, 1768) (Lacertidae), *Podarcis erhardii* (Bedriaga, 1876) (Lacertidae), *Podarcis muralis* (Laurenti, 1768) (Lacertidae), *Podarcis tauricus* (Pallas, 1814) (Lacertidae), *Zootoca vivipara* (Jacquin, 1787) (Lacertidae), and *Ablepharus kitaibelii* Bibron and Bory St-Vincent, 1833 (Lacertidae)]; and three tortoises [*Emys orbicularis* (Linnaeus, 1758) (Emydidae), *Testudo graeca* Linnaeus, 1758 (Testudinidae), and *Testudo hermanni* Gmelin, 1789 (Testudinidae)].

Hitherto, only three snakes known to induce dangerous envenomation in humans have been recorded in the Republic of Kosovo, all being viperids (see above), a group well known to be venomous. Our understanding of what constitutes a venomous snake, particularly in colubrids—the vast majority of which were historically considered non-venomous—has been revolutionized in recent years, and there has been comprehensive critique of case reports of colubrid envenomations in humans (Weinstein et al. 2022).

In this article, we add three new snake species to the list of those already known from the Republic of Kosovo, based on individuals observed during fieldwork focused on invertebrates. Of these, all colubrid genera involved have had putative human envenomations recorded in the literature from other countries, but the evidence in these case studies is questionable, and there is no evidence that they are dangerously venomous (Weinstein et al. 2022).

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Material and methods

The new species were observed in the areas of Kërvenik and Pustenik. The snakes were captured, photographed, and immediately released; no information on body length or sex is available. However, examination of their external morphology, facilitated by photographs, allowed for definitive identification.

Results

Platyceps najadum (Eichwald, 1831)

Remarks. One individual (Fig. 1A) was observed on 15 May 2018 in Pustenik (42.149952, 21.282107) (Fig. 2), found in grass near the forest. This is a new record for the Republic of Kosovo, both for the genus and the species. *Platyceps najadum* is distributed across a relatively wide area, including much of the Balkans (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Serbia, and Turkey) and other more distant regions (Armenia, Azerbaijan, Cyprus, Georgia, Iraq, Lebanon, Russia, and Turkmenistan) (Uetz et al. 2025). The zoogeographic gap in Kosovo is thus predictably closed. A reported death from the bite of this species elsewhere (Chroni et al. 2005) is highly suspect and likely erroneous (see below).

Telescopus fallax (Fleischmann, 1831)

Remarks. Five individuals (only one photographed; Fig. 1B) were observed on the same day in Kërvenik (42.109392, 21.255953) (Fig. 2), found under rocks in a dry, open, and stony area. This is a new record for the Republic of Kosovo, both for the genus and the species. This widespread species is reported from Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Greece, Italy, Iran, Iraq, Israel, Malta, Montenegro, North Macedonia, Russia, Serbia, Slovenia, Syria, and Turkey (Uetz et al. 2025). Given its distribution throughout the countries bordering the Republic of Kosovo, its presence in the country is not surprising. Only mild envenomation has been reported for a disjunct subspecies of this species (Sultanov 1966), with no bites recorded from the nominate subspecies (see below).

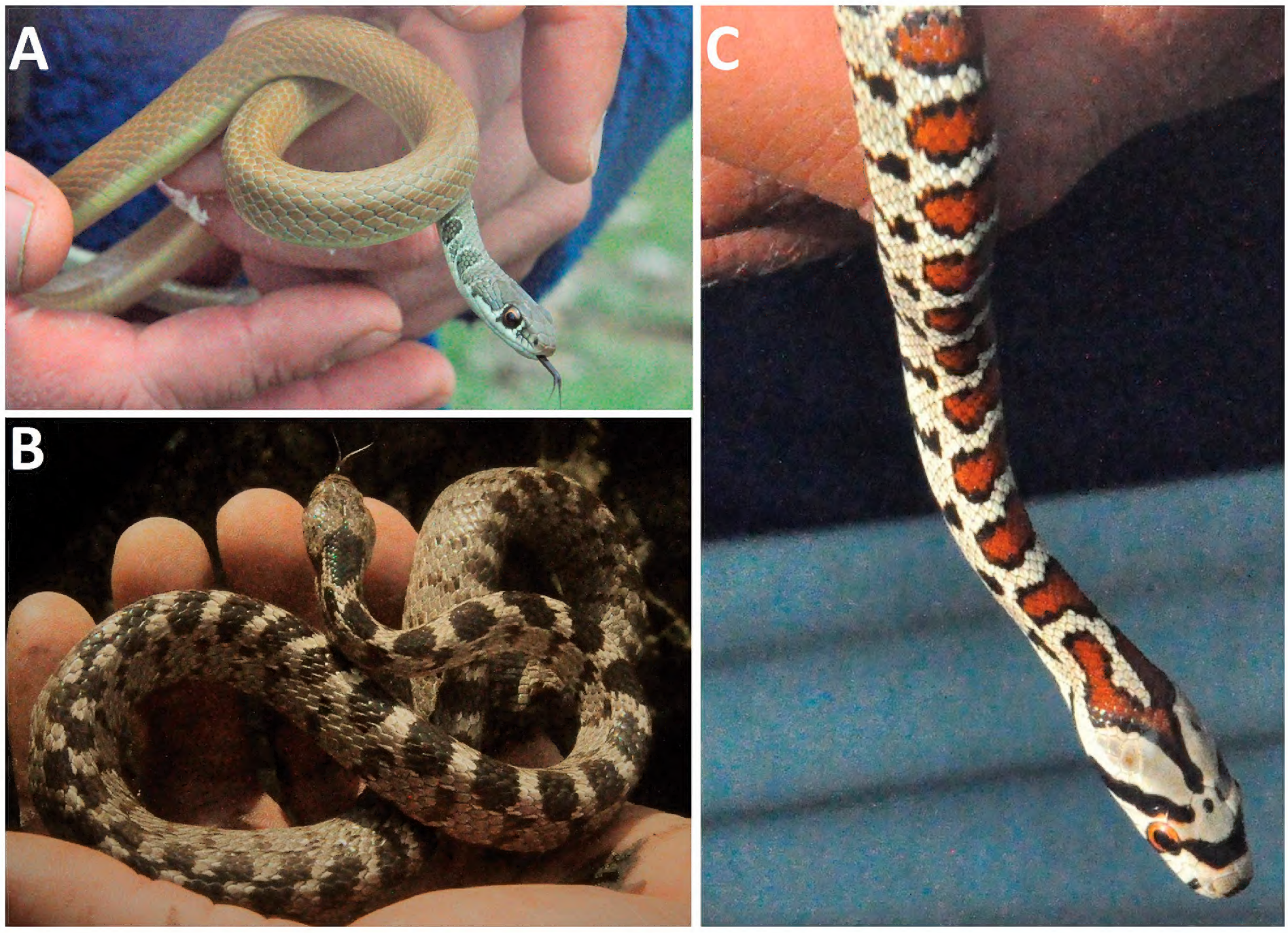

Figure 1. Three colubrid snakes new to the Republic of Kosovo. **A.** *Platyceps najadum* (Eichwald, 1831); **B.** *Telescopus fallax* (Fleischmann, 1831); **C.** *Zamenis situla* (Linnaeus, 1758). © thephoxinus [Marko Wanke], CC BY-NC 4.0 (https://creativecommons.org/licenses/by-nc/4.0/).

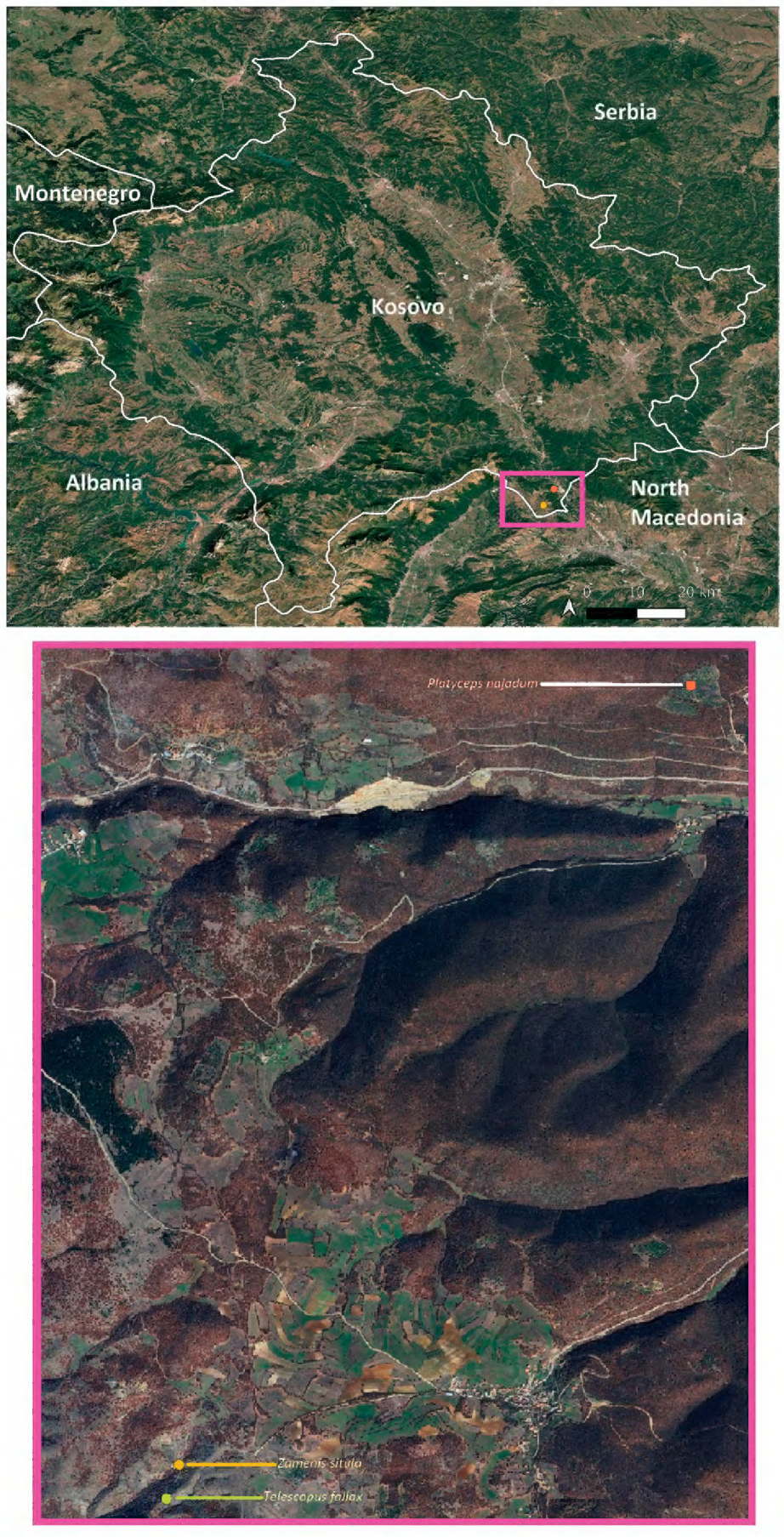

Figure 2. Map showing localities of respective snakes; the insect shows a close-up of the sites. Map made in QGIS ver. 3.34.6 Prizren.

Zamenis situla (Linnaeus, 1758)

Remarks. One individual (Fig. 1C) was observed on the same day in Kërvenik (42.111095, 21.256590) (Fig. 2), moving from the forest to a dry, open, and stony area. The congeneric species, *Z. longissimus* (Laurenti, 1768), had already been reported in the Republic of Kosovo, while *Z. situla* is reported here for the first time. The latter is present in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Greece, Italy, Malta, Montenegro, North Macedonia, Serbia, Turkey, and Ukraine (Uetz et al. 2025). Like *T. fallax*, its presence in the Republic of Kosovo is not surprising, as it occurs in all neighboring countries. This species is non-venomous, with an absence of a Duvernoy's gland; a supposed record of anaphylaxis from the bite of a congener in Serbia is not supported by objective evidence (see below).

Discussion

All three newly recorded species belong to the family Colubridae Oppel, 1811, bringing the number of snake and reptile species in the country to 12 and 25 species, respectively; consequently, snakes now constitute the largest reptile suborder in Kosovo, with colubrids making up the majority (eight taxa). Three dangerously venomous snakes are present in the country: *V. ammodytes* (widespread), *V. berus* (localized), and *V. ursinii* (very localized). In contrast, the recently observed *T. fallax* is a mildly venomous snake, with the only scientifically recorded bite (Sultanov 1966)—from the subspecies *Telescopus fallax iberus* (Eichwald, 1831)—producing only local effects, likely aggravated by contraindicated medical procedures (see Weinstein et al. 2022). Contrary to one published case report (Chroni et al. 2005) that claimed a protracted fatality from this species, *P. najadum* is unlikely to be capable of life-threatening bites, and many other conditions are more likely to have caused the patient's death (Weinstein et al. 2022). No bites from *Z. situla* have been recorded, and the genus lacks a Duvernoy's gland. The report of a supposed anaphylaxis following a suspected bite from the related species *Z. longissimus* in Serbia by Ninić-Marinković (2015) was considered "insufficient for evidence-based analysis" by Weinstein et al. (2022: 367). Therefore, none of the newly reported species changes the number of snakes in the Republic of Kosovo known to be dangerously venomous to humans.

With only 25 recorded species, the Republic of Kosovo has a lower total of reptile species than its neighboring countries (Albania: 41; Montenegro: 40; North Macedonia: 34; Serbia: 27) (Uetz et al. 2025), but we suspect that further field research may reveal more species in the country that are known to occur in one or more of these neighboring countries. Four species very likely to occur in the Republic of Kosovo are: *Lacerta trilineata* (Bedriaga, 1886) (Lacertoidea: Lacertidae), recorded from the southern border of Serbia, a very short distance from the eastern border of the Republic of Kosovo (Anđelković et al. 2022); *Elaphe quatuorlineata* (Lacépède, 1789) (Serpentes: Colubridae), reported from southeastern Serbia, east of the border of the Republic of Kosovo (Ristić et al. 2006); *Xerotyphlops vermicularis* (Merrem, 1820) (Serpentes: Typhlopidae), for which the distribution range includes northern North Macedonia, not far from the southern border of the Republic of Kosovo (Koynova et al. 2021); and *Mauremys rivulata* (Valenciennes, 1833) (Testudinoidea: Geoemydidae), which has a distribution that includes an area along the border of northern North Macedonia and southern Republic of Kosovo (Midtgaard 2025).

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